AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1. [CURRENTLY AMENDED] A method of allocating protection bandwidth for restoring data traffic following detection of a resource failure affecting working bandwidth between first and second nodes in a communications network comprising at least two adjoining ~~data transport~~line switched rings (LSRs) interconnected by a ~~respective~~ matched pair of Service Access Point (SAP) nodes and having sparsely provisioned protection bandwidth, the method comprising steps of, at a current node:

searching for provisioned protection bandwidth within a current ~~data transport ring~~LSR; and

if provisioned protection bandwidth is not found within the current ~~data transport ring~~ LSR, searching for provisioned protection bandwidth within an adjoining LSR~~data transport ring~~.

2. [CURRENTLY AMENDED] A method as claimed in claim 1, wherein each LSR~~data transport ring~~ is a Bi-directional Line Switched Ring (BLSR) incorporating the matched pair of SAP nodes, and lacking provisioned protection bandwidth between the matched pair of SAP nodes.

3. [CURRENTLY AMENDED] A method as claimed in claim 1, wherein the current LSR~~data transport ring~~ comprises any one or more of:

a ring on which the resource failure was detected; and

a ring on which data traffic is received by the current network node through protection bandwidth allocated to the protection path.

4. [ORIGINAL] A method as claimed in claim 1, further comprising a step of allocating located provisioned protection bandwidth to a protection path.

5. [ORIGINAL] A method as claimed in claim 4, further comprising steps of:

at the first node, generating a search stack including a root entry comprising information respectively identifying the first and the second nodes as ingress and egress nodes; and

forwarding the search stack to an adjacent node through the protection path.

6. [CURRENTLY AMENDED] A method as claimed in claim 5, further comprising a step of receiving the search stack through the protection path at ~~a~~ the current node.

7. [ORIGINAL] A method as claimed in claim 6, further comprising steps of;

searching the search stack to determine if the current node is identified as an egress node in the search stack; and

if the current node is identified as an egress node, removing at least one entry from the search stack.

8. [ORIGINAL] A method as claimed in claim 7, wherein the step of searching the search stack comprises a step of comparing a node identifier of the current node with each egress node identifier stored in the search stack.

9. [ORIGINAL] A method as claimed in claim 7, wherein the step of removing at least one entry from the search stack comprises a step of removing each entry comprising information identifying the current node as an egress node.

10. [ORIGINAL] A method as claimed in claim 9, further comprising steps of:

searching the search stack to determine if the search stack is empty; and

if the search stack is empty, restoring data transport between the first and second nodes using the protection path.

11. [ORIGINAL] A method as claimed in claim 10, wherein the step of restoring data transport comprises a step of switching data traffic received through the protection path to working bandwidth of a downstream link.

12. [ORIGINAL] A method as claimed in claim 7, further comprising, if the current node is not identified as an egress node and provisioned protection bandwidth is located by the current node within the adjacent data transport ring, a step of adding a second entry to the search stack, the second entry comprising information respectively identifying the current node and a corresponding matched node as ingress and egress nodes.

13. [ORIGINAL] A method as claimed in claim 1, further comprising, if provisioned protection bandwidth cannot be located in either the current or adjacent data transport rings, a step of generating a failure alarm message.

14. [CURRENTLY AMENDED] A system for allocating protection bandwidth for restoring data traffic following detection of a resource failure affecting working bandwidth between first and second nodes in a communications network comprising at least two adjoining ~~data transport~~line switched rings (LSRs) interconnected by a respective matched pair of Service Access Point (SAP) nodes and having sparsely provisioned protection bandwidth, the system comprising:

means for searching for provisioned protection bandwidth within a current LSR~~data transport ring~~; and

means for searching for provisioned protection bandwidth within an adjoining LSR~~data transport ring~~, if provisioned protection bandwidth is not found within the current LSR~~data transport ring~~.

15. [CURRENTLY AMENDED] A system as claimed in claim 14, wherein each LSR~~data transport ring~~ is a Bi-directional Line Switched Ring (BLSR) incorporating the matched pair of SAP nodes, and lacking provisioned protection bandwidth between the matched pair of SAP nodes.

16. [CURRENTLY AMENDED] A system as claimed in claim 14, wherein the current LSR ~~data transport ring~~ comprises any one or more of:

a ring on which the resource failure was detected; and

a ring on which data traffic is received by the current network node through protection bandwidth allocated to the protection path.

17. [ORIGINAL] A system as claimed in claim 14, further comprising means for allocating located provisioned protection bandwidth to a protection path.

18. [ORIGINAL] A system as claimed in claim 17, further comprising:

means for generating a search stack at the first node, the search stack including a root entry comprising information respectively identifying the first and the second nodes as ingress and egress nodes; and

means for forwarding the search stack to an adjacent node through the protection path.

19. [ORIGINAL] A system as claimed in claim 18, further comprising means for receiving the search stack through the protection path at a current node.

20. [ORIGINAL] A system as claimed in claim 19, further comprising:

means for searching the search stack to determine if the current node is identified as an egress node in the search stack; and

means for removing at least one entry from the search stack, if the current node is identified as an egress node.

21. [ORIGINAL] A system as claimed in claim 20, wherein the means for searching the search stack comprises means for comparing a node identifier of the current node with each egress node identifier stored in the search stack.

22. [ORIGINAL] A system as claimed in claim 21, wherein the means for removing at least one entry from the search stack comprises means for removing each entry having information identifying the current node as an egress node.

23. [ORIGINAL] A system as claimed in claim 22, further comprising:

means for searching the search stack to determine if the search stack is empty; and

means for restoring data transport between the first and second nodes using the protection path, if the search stack is empty.

24. [ORIGINAL] A system as claimed in claim 23, wherein the means for restoring data transport comprises means for switching data traffic received through the protection path to working bandwidth of a downstream link.

25. [ORIGINAL] A system as claimed in claim 20, further comprising, means for adding a second entry to the search stack if the current node is not identified as an egress node and provisioned protection bandwidth is located by the current node within the adjacent data transport ring, the second entry comprising information respectively identifying the current node and a corresponding matched node as ingress and egress nodes.

26. [ORIGINAL] A system as claimed in claim 14, further comprising means for generating a failure alarm message if provisioned protection bandwidth cannot be located in either the current or adjacent data transport rings.

27. [CURRENTLY AMENDED] A node adapted to restore data traffic following detection of a resource failure affecting working bandwidth between first and second

nodes of a communications network comprising at least two adjoining ~~data transport~~line switched rings (LSRs) interconnected by a respective matched pair of Service Access Point (SAP) nodes and having sparsely provisioned protection bandwidth, the node comprising:

means for searching for provisioned protection bandwidth within a current LSR~~data transport ring~~; and

means for searching for provisioned protection bandwidth within an adjoining LSR~~data transport ring~~, if provisioned protection bandwidth is not found within the current LSR~~data transport ring~~.

28. [CURRENTLY AMENDED] A node as claimed in claim 27, wherein each LSR~~data transport ring~~ is a Bi-directional Line Switched Ring (BLSR) incorporating the matched pair of SAP nodes, and lacking provisioned protection bandwidth between the matched pair of SAP nodes.

29. [CURRENTLY AMENDED] A node as claimed in claim 27, wherein the current LSR~~data transport ring~~ comprises any one or more of:

a ring on which the resource failure was detected; and

a ring on which data traffic is received by the current network node through protection bandwidth allocated to the protection path.

30. [ORIGINAL] A node as claimed in claim 27, further comprising means for allocating located provisioned protection bandwidth to a protection path.

31. [CURRENTLY AMENDED] A node as claimed in claim 27~~17~~, further comprising:

means for generating a search stack including a root entry comprising information identifying the node as an ingress node and a second node as an egress node; and

means for forwarding the search stack to an adjacent node through the protection path.

32. [ORIGINAL] A node as claimed in claim 31, further comprising means for receiving the search stack through the protection path.

33. [ORIGINAL] A node as claimed in claim 32, further comprising:

means for searching the search stack to determine if the node is identified as an egress node in the search stack; and

means for removing at least one entry from the search stack, if the node is identified as an egress node.

34. [ORIGINAL] A node as claimed in claim 33, wherein the means for searching the search stack comprises means for comparing a node identifier of the node with each egress node identifier stored in the search stack.

35. [ORIGINAL] A node as claimed in claim 34, wherein the means for removing at least one entry from the search stack comprises means for removing each entry having information identifying the node as an egress node.

36. [ORIGINAL] A node as claimed in claim 33, further comprising:

means for searching the search stack to determine if the search stack is empty; and

means for restoring data transport between the first and second nodes using the protection path, if the search stack is empty.

37. [ORIGINAL] A node as claimed in claim 36, wherein the means for restoring data transport comprises means for switching data traffic received through the protection path to working bandwidth of a downstream link.

38. [ORIGINAL] A node as claimed in claim 33, further comprising means for adding a second entry to the search stack, the second entry comprising information respectively identifying the current node and a corresponding matched node as ingress and egress nodes.

39. [CURRENTLY AMENDED] A node as claimed in claim 27, further comprising means for generating a failure alarm message if provisioned protection bandwidth cannot be located in either the current or adjacent LSR~~data transport rings~~.